

Claims

1. A vibration mounting comprising a base member for mounting to a mounting location and a support member for supporting a load, the support member being spaced apart from the base member in a load-bearing direction by a vibration isolating element of a resilient material, the vibration mounting having a centre-line in said load-bearing direction:

wherein the vibration isolating element comprises a plurality of lobes on each side of a plane passing through said centre-line;

wherein each lobe extends from the base member towards the support member and also extends in a lateral direction different from that of other lobes; and

wherein each lobe has an upper surface engaging the support member and at least one free surface.

2. The vibration mounting of claim 1 wherein the lateral direction is substantially orthogonal to the load-bearing direction.

3. The vibration mounting of claim 1 or claim 2 wherein the lobes are arranged to extend outwardly from a central portion of the vibration isolating element secured to a raised portion of the base member, and at an angle to the base member, an outward end of each lobe engaging a corresponding portion of the support member.

4. The vibration mounting of claim 3, wherein the corresponding portion of the support member is an end portion extending towards the base member that bears against an outer end surface of the lobe.

5. The vibration mounting of any preceding claim wherein the support member comprises one or more buffer members extending towards the base member between adjacent lobes of the vibration isolating element such that the buffer member contacts a resilient material buffer secured to the base member when vibration displacements exceed a predetermined amplitude.

6. The vibration mounting of claim 5 wherein the vibration isolating element comprises an elastomeric polymer formed by injection moulding to the base member.

7. The vibration mounting of claim 6 wherein the resilient material buffer and the vibration isolating element are formed as an integral injection moulded unit.

8. The vibration mounting of any one of claims 5 to 7 wherein the resilient material buffer is provided with means for reducing friction when contacting the buffer member.

9. The vibration mounting of claim 8 wherein the friction reducing means comprises contact plates of nylon or other suitable low friction material.

10. The vibration mounting of any one of claims 5 to 9 wherein the buffer member contacts the resilient material buffer when vibration displacements exceed a predetermined amplitude in a first direction.

11. The vibration mounting of claim 10 further comprising a secondary buffer for further increasing resistance to displacement beyond a second predetermined amplitude of vibration displacement in the first direction.

12. The vibration mounting of any one of claims 5 to 11 including further buffers for increasing resistance to displacement of the support member relative to the base member in the load-bearing direction and in a third direction beyond a threshold displacement in each direction.

13. The vibration mounting of claim 12 wherein the load-bearing, first and third directions are substantially mutually orthogonal directions.

14. The vibration mounting of claim 12 or claim 13, wherein, in the load-bearing direction, the further buffer comprises a first buffer for increasing resistance to a positive displacement beyond a positive displacement threshold and a second buffer

for increasing resistance to a negative displacement beyond a negative displacement threshold.

15. The vibration mounting of claim 14 wherein the second buffer is provided as a failsafe feature to prevent the support member and the base member becoming detached from one another in the event of a failure of the vibration isolating element.

16. The vibration mounting of any preceding claim wherein the mounting location has a predetermined footprint and includes predetermined fastener positions within the footprint for securing the base member, the vibration mounting being sized to fit the predetermined footprint.

17. The vibration mounting of claim 16 wherein the fastener positions are holes for accepting mounting bolts.

18. The vibration mounting of claim 16 or claim 17 wherein the lobes are arranged so as to allow access to, and not interfere with, the fastener positions.